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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,274	03/03/2004	Ryoji Ninomiya	008312-0308597	8948
909 7590 06/15/2009 PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102				
EXAMINER				
WALKER, KEITH D				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
06/15/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,274

Applicant(s)

NINOMIYA ET AL.

Examiner

KEITH WALKER

Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2009.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-13, 15-17 and 25-39 is/are pending in the application.
4a) Of the above claim(s) 4-13, 15-17 and 25-33 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 34-39 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Claim 39 is new and claims 4-13, 15-17 & 25-39 are pending in the application. Claims 4-13, 15-17 & 25-33 are withdrawn from consideration and claims 34-39 are pending examination.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 34-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 34, the limitation "inform the operating system of the shutdown initiating value as the remaining amount of fuel in the tank" is indefinite because it is unclear if "the remaining amount" is referring to the remaining amount that is measured by the measurement module or a new value that is obtained by the calculation equating to the shutdown initiating value? Since the predetermined value has no limitations as to the value, the value could equal zero and so the reported "shutdown initiating value" would equal the measured remaining amount.
2. Claims 34-39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. Regarding claim 34, the term "shutdown initiating value" is indefinite because it is unclear if the term is suppose to be descriptive and therefore limiting as to what the value does or if the term is just a value name. For example if the term is suppose to be descriptive and the value does not match a predetermined value is it still initiating a shutdown? As the term is unclear, the claimed subject matter is not distinctly claimed and the claim is indefinite. The term will be interpreted as just a value.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,057,051 (Uchida).

Uchida describes a personal computer that is configured to execute an operating system and has a body having a display unit and a controller. A detachable fuel cell unit powers the computer and comprises a fuel cell, a fuel tank, a sensor for detecting the amount of fuel remaining in the tank and a control unit with a first storage unit (Fig. 1; 3:1-15, 3:30-40, 7:39-54). The sensor detects the amount of fuel remaining and then the amount of operation time remaining is computed. The calculated remaining

operating time information is sent to the electronic apparatus through a connection terminal so the electronic apparatus' equipment can display the information (Figs. 1 & 5; 7:39-46). The method discloses detecting the remaining amount of fuel and then computing the amount of remaining operating time and the elapsed operating time (7:50-55). As the remaining operating time directly relates to the amount of fuel in the tank, the operating system is informed of a shutdown initiating value that is the remaining amount of fuel in the tank.

Uchida is silent to the mathematical formula of subtracting a value from the measured amount to obtain a second value. However, using a predetermined lower limit value for expressing low fuel is well-known in the art. The lower limit value allows the user to know when the electronic apparatus is running low on the respective fuel, albeit gasoline, battery power, hydrogen power. The lower limit is created by subtracting a predetermined value from the total volume the tank can hold and setting this new value as the empty notifying value. This notice of low fuel creates a reserve that allows the proper actions to be taken to either continue operating the apparatus or to safely shutdown the apparatus. The claimed method of subtracting a predetermined value from an actual measured value and then reporting the new value also creates a reserve equal to the amount of the predetermined value. This calculated reserve is equivalent to the reserve created by the predetermined lower limit value. Both methods create a reserve amount of fuel for the user or apparatus to use to correct the issue of low fuel.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to subtract a predetermined value, which equates to a desired fuel reserve amount, from an actual measured fuel amount to provide a user or an apparatus the necessary fuel and time to safely correct the issue of low fuel.

Regarding claim 39, Uchida is silent to the predetermined value being 2%. However, it would be obvious to one skilled in the art at the time of the invention to set the predetermined amount such that the reserve amount allows the apparatus to have the maximum operating time while reserving enough fuel to properly shutdown or correct the situation. Claims that differ from the prior art only by slightly different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. (MPEP 2144.05) The claimed value of 2% is not shown as critical or producing unexpected results and so is obvious over the teachings of a minimum level. Use of known technique to improve similar devices in the same way and applying a known technique to a known device ready for improvement to yield predictable results is obvious to one of ordinary skill in the art (MPEP 2141 III).

2. Claims 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,057,051 (Uchida) in view of US 2002/0127447 (Edlund).

The teachings of Uchida as discussed above are incorporated herein.

Uchida is silent to the mathematical formula of subtracting a value from the measured amount to obtain a second value.

Edlund teaches a fuel cell system with a controller that obtains the amount of fuel remaining in a tank from a measurement module and compares the fuel level to a predetermined minimum value. If the measured value meets the minimum value then the controller initiates the shutdown sequence and informs the user (Fig. 3; [0036, 0037]). Using a predetermined minimum value protects the fuel cell system and allows the user to correct the problem so the fuel cell can continue to produce power as needed.

Therefore it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the fuel cell system of Uchida with the predetermined minimum value and shutdown sequence taught by Edlund to ensure the fuel cell system is not damaged and allow the user time to correct the problem.

As discussed above, the process of subtracting a value ahead of time to create a predetermined minimum value is equivalent to the process of subtracting a predetermined value after measuring a value. Therefore, it would be obvious to one skilled in the art at the time of the invention to subtract a predetermined value after determining the actual value to create a reserve value.

Regarding claim 39, Uchida and Edlund are silent to the predetermined value being 2%. However, it would be obvious to one skilled in the art at the time of the invention to set the predetermined amount such that the reserve amount allows the apparatus to have the maximum operating time while reserving enough fuel to properly shutdown or correct the situation. Claims that differ from the prior art only by slightly

different (non-overlapping) ranges are prima facie obvious without a showing that the claimed range achieves unexpected results relative to the prior art. (MPEP 2144.05) The claimed value of 2% is not shown as critical or producing unexpected results and so is obvious over the teachings of a minimum level. Use of known technique to improve similar devices in the same way and applying a known technique to a known device ready for improvement to yield predictable results is obvious to one of ordinary skill in the art (MPEP 2141 III).

Response to Arguments

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection as required by the new claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH WALKER whose telephone number is (571)272-3458. The examiner can normally be reached on Mon. - Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Walker

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795